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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,713	06/16/2000	Richard Hsiao	SJO990202US1	3561

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EXAMINER
OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
1746	5

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-5

Office Action Summary	Application N .	Applicant(s)	
	09/595,713	HSIAO ET AL.	
	Examiner	Art Unit	
	Allan W. Olsen	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 June 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description:
page 5, line 3 refers to magnetic head 10;
page 6, line 11 refers to a Ni fluoride film 88;
page 6, line 17 refers to a magnetic head 50.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The use of the trademark PERMALLOY has been noted in this application (page 1, line 7). It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

The disclosure is objected to because of the following informalities:

page 6, line 1 – "steep angle 60" redefines "60" which was used previously (page 5, line 21) in reference to the etchant species;

page 6, line 1 – "alumna" should be –alumina--;

page 7, line 9, reference number "64" is used with reference to the C2F6/Ar beam whereas previously (page 6, line 1) "64" was used in reference to an angle;

Appropriate correction is required.

Claim Objections

Claims 3 and 7 are objected to because of the following informalities:

in claim 3, "right" should be --write--;

in claim 7, "flouride" should be –fluoride--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 8 and 18, and thereupon dependent claims 2-7 and 8-17, are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for steps pertaining to the etching of the write gap layer and underlying pole layer, does not reasonably provide enablement for "conducting further steps to complete the fabrication of said magnetic head". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The specification provides no information pertaining to the further steps that are required to complete the fabrication of the magnetic head.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,316,617 issued to Kawabe et al. (hereinafter, Kawabe).

Kawabe teaches the use of C2F6 to etch the alumina gap layer of a magnetic head and subsequently etching the underlying magnetic (pole) layer with an argon ion beam (column 8, line 58 column 9, line 45).

Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,238,582 issued to Williams et al. (hereinafter, Williams).

Williams teaches a method if making a magnetic head in which the write gap layer is etched by an ion bean generated from a mixture of C2F6 and Ar and then argon is used to etch the underlying magnetic pole layer (column 8, line 36 – column 9, line 33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams.

Williams teaches the limitations of independent claims 1 and 8 as noted above. Williams teaches and claims that any one of six specific fluorocarbons, including C2F6 and CHF3, can be used to etch the gap layer. Williams teaches using 75 % fluorocarbon in a fluorocarbon/Ar etchant mixture (column 8, line 59). Williams teaches etching the write gap layer using a first ion beam angle of about 10° (0° - 20° column 8, line 40) followed with a side wall cleanup step using an angle of 60°-90°. Williams teaches using a beam voltage of 700 V with a beam current of 1100 mA (column 11, line 67).

Williams does explicitly teach not teach the fluorocarbon concentration, the ion beam angle, the ion beam voltage or ion beam current, when the fluorocarbon is C2F6.

When substituting C2F6 for CHF3, it would have been obvious to one skilled in the art to use a C2F6 concentration, as well as the beam voltage, current and angles that Williams taught when CHF3 was used as the fluorocarbon etchant because Williams teaches that C2F6 may be substituted for CHF3. Williams is silent with regard to the specific values of these parameters when using a fluorocarbon other than the CHF3 that was used in the examples of Williams. Therefore, it would be obvious to use

the same process conditions when substituting one functionally equivalent fluorocarbon for another because Williams does not teach or suggest that any of these parameters should be changed when one functionally equivalent fluorocarbon is substituted for another.

Additionally, it is noted that Williams does not teach a Ni fluoride film is formed on the upper pole when the write gap layer is being etched. However, as Applicant and Williams use the same etchant to etch the same material under the same conditions, the claimed Ni fluoride film would inherently be present in the method of Williams.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Otsuka et al., Futai et al., Hara et al, and Dill et al. could each be used in 102 and/or 103 rejections of the instant claims. However, in view of the rejections set forth above, the examiner believes additional rejections based upon these additionally cited references are not necessary at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is (703) 306-9075. The examiner can normally be reached on Monday through Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (703) 308-4333. The fax phone number for this Group is (703) 305-7719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Allan Olsen, Ph.D.
February 19, 2002